THE JOURNAL
of the
South Carolina Medical Association

VOLUME XXXII November, 1936 NUMBER 11

PSYCHOLOGY OF SUB-NORMAL INDIVIDUALS

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The term "sub-normal" implies existence of a norm or standard, whether reference is being made to height, weight, health, emotions, or intelligence. Primarily, the latter is under consideration here.

Identification and Classification of Individuals—By some method individuals have always been classified by others, usually according to their reactions to life, ability to learn, contributions, achievements, etc., but not until the advent of intelligence tests was there a scientific approach. In 1905, Binet, a French physician, constructed a test which has had many revisions. The one best known is that of Terman, done at Stanford, and known by that name. It is not a completely satisfactory instrument, but in the hands of a competent psychologist, used with tests of special abilities and aptitudes, in connection with developmental history and physical examination, it serves well in evaluating certain characteristics of individuals. A random sampling of the population, when subjected to intelligence tests, shows that 50 per cent cluster around one point, with a gradual shading higher on one side and lower on the other. Boundary lines have been used according to ratings and names given to these groups for the purpose of transmission. The largest group is called "normal," those rating above, "superior," "very superior," and "genius,"—those rating below, "dull normal," "borderline," and "sub-normal," "mentally deficient," "inferior intelligence," "retarded," "backward," "feebleminded,"—these terms being used interchangeably, all are designated in terms of intelligence ratings or Intelligence Quotient, as commonly expressed. The average or normal person has a rating between 90 and 110. This is confusing to many, accustomed to think of 100 as a perfect mark. Persons of average intelligence are rarely able to do outstanding work in major colleges or universities, if they are found there at all. There the mean IQ is usually very high. In the psychometric conception of the term, subnormal includes individuals having an IQ of 70 or less, divided into three groups,—between 70 and 50, called "morons," between 50 and 25, "imbeciles," below 25 "idiots."

Nature of Intelligence—Scientific explanation necessitates defining the nature of intelligence in relation to other aspects of human activities and has stimulated much controversy among psychologists as to the true meaning of intelligence. Binet's conception emphasizes three characteristics of the thought process, (1) Ability to take and maintain a definite direction, (2) Capacity to make adaptation for the purpose of attaining a desired end, and (3) power of auto-criticism. Henderson and Gillespie state that "for medical purposes, it may be taken to mean the ability to understand one's environment and to make use of one's understanding, to earn a living." Clinical investigations have produced evidence showing that there are factors other than intelligence, such as emotional and moral defects, which render an individual incapable of "understanding the environment" and ability to make use of this knowledge in earning a livelihood.

Criterion of Mental Deficiency—Wells would favor the classification of mental deficiency,

Read before the South Carolina Medical Association, Greenville, S. C., April 23, 1936.

"where the person's inability to meet the demands of his environment arises in the main from defective intelligence in the psychometric conception of the term. Whether the defective intelligence arises through congenital, traumatic, or toxic causes is merely academic, save that the cause is generally assumed to be present from birth or very early years, and a distinction from deterioration should be made. Behavior inadequate to the demands of the environment arising in other ways, as unbalanced emotional or instinctive life, intoxication, or diseases of the nervous system, is covered in other not less definite diagnostic classifications (psychoses, psychopathic personalities, etc.)" The definition in most general use is the one framed by the Royal College of Physicians and Surgeons in London and adopted by the English Royal Commission on Mental Deficiency, "A feebleminded person is one who is incapable, because of mental defect existing from birth or from early age, (a) of competing on equal terms with his normal fellows or (b) of managing himself or his affairs with ordinary prudence." Terman, like Wells, prefers that classification be made upon the basis of psychometric findings, as the above definition is stated in terms of social and industrial efficiency. Therefore, an individual having an IQ of 68 might live in the hills where he could pass in his crude environment as normal. It becomes necessary, therefore, in clinical practice, when an individual is presented because of his social and industrial failures, not only to investigate his intelligence but his emotions and his environment.

Inmates in an Institution—Institutions like the State Training School were founded for the purpose of caring for mental defectives according to psychological ratings. The Reform Schools were established for the purpose of reforming the "bad" girl or boy. Society usually waits until they commit a crime, then the courts impose a sentence. Some of these "bad" boys and girls are sent to the Training School, usually by some agency or parents who fear for their future, before they have committed a crime. Their behavior in every respect implies mental deficiency, but psychometric tests do not reveal it. On the other hand, sub-normals are sent to Reform Schools. Who are these "bad" boys and girls? They are children who have erred either because they themselves were constitutionally unfit to meet everyday problems of life as their associates or because external factors have borne down upon them with such intensity they were unable to stand the pressure. Commitment of such individuals to institutions often depends upon the persons or agencies handling the cases. From this discussion we understand that for descriptive purposes an individual's diagnosis cannot be confined to psychometric classification alone. The common additional term used to describe an individual who does not function as he should is "emotionally unstable," which does not describe what is wrong with him but merely conveys that he does not behave like the average. Thus a classification might be, "moron, emotionally unstable" or "normal intelligence, emotionally unstable," etc. So far, states have not provided well for the care and training of the emotionally unstable group. In some large cities there are special classes for them but very few. The poor man's child is usually found in state institutions of this sort.

Classification According to Cause—Previous discussion indicates that the sub-normal, according to psychometric ratings, are not a different species but different only in degrees of intelligence. According to statistics of mentally subnormal, a large percentage are due to inferior germ plasm, the remainder are victims of organic causes and expressed in medical terms are "pathological cases." The former are known as "primary amentias;" the latter as "secondary amentias," differentiated from dementia in that the condition existed from birth or an early age. Under secondary amentia we vnd (1) Cretinism,—three groups,—cretins, semi-cretins, cretinoids; (2) Mongolism; (3) Hydrocephalus, congenital and acquired; (4) Microcephalus; (5) Paralytic types; (6) Epileptic types; (7) Syphilitic types; (8) Inflammatory types; (9) Sense Deprivation types.

A low degree of intelligence is no insurance against mental and nervous disorders to which children in general may be subject. Just as they may contract an organic disease, so they may be afflicted by disorders of the mind and nerves. Definite cases of psychoses have been reported by Hollingsworth in her studies of the

mentally deficient at Bellevue Hospital. While we have no typical cases in our institution, there are those who show such tendencies as being elated, flighty, violent outbursts of temper, with periods of blues, with no particular stimulus for it. Others have false beliefs, delusions, etc.

Case Study No. 1—A.G., girl 14, admitted 8 years ago. Mental age 3-Y 2-M, IQ 22. Five years ago, IQ 30. Shortly after admission was timid, docile, somewhat tractable. At that time, 6 years of age, made little effort to talk. One year later, continued quiet, beginning to talk and proud of personal appearance. Says, "pretty dress." Tendency toward stubbornness, which subsides before age 10. Able to do errands, tidy, cares for self and continues pride in personal appearance. Age 11, able to polish, assist in dressing other children and dressed herself. Never soiled, played with others in games, holds up head and talks. Learned to make beds in addition to other little errands but gets disturbed and upset if she cannot wear clothes she chooses. Age 12, destroyed three dresses in one week. Had to be put in coveralls. When angry, said: "I am going to soil myself." Periods of quiet alternating with irritability. Age 13, began to display very overt behavior. Without reason would bite, pinch, scratch, and choke others. During early morning hours would get jar of urine and attempt to dash in someone's face. Has smeared bed, door facings, and individuals with fecal matter. Possibly, if she had constant attention of one attendant, she might be different, as she is readily quieted by employees, especially if she likes them. Attendants having to give attention to others may account for her type of behavior. She has shown jealous tendencies. Because of tendency to spread fecal matter over building or children, at times, necessary to place her in a wire compartment, removing all clothing. She immediately evacuates rectum naturally or induces it, plastering her body, screaming during the process. Physician reports, on account of masturbation, examination was given to ascertain existence of local irritation. No adhesions or anything unusual found except hypertrophied labia minor. Triple bromides, dr. 1 td, prescribed. Continued this three weeks, during which period she seemed to improve.

There are many others in the Institution older than this girl and about her age, with same IQ level, who have never displayed on any occasion such overt behavior.

Case Study No. 2—E.L. Committed by Court to Training School 1931, age 10-Y 6-M. Now aged 15. IQ 54, now 39. Family history presents picture in foreground of individuals low in intelligence, illiterate, unkempt, against background of poverty and sloth. Father aged 80, mother 47. Four siblings. First few months in Institution was not considered atypical. Then became object of curiosity in her building, did not play with other children, would close one eye, hide her face, laugh in silly way. Food had no appeal, occasionally would hide behind a tree, then get up and run as though something were after her. Employees unable to teach simplest kind of work. When polishing floor, would take the handle, laugh and grimace in manner above mention, move on, if told over and over. Later, refused to go to bath room unattended. Would cover herself entirely to escape being caught by someone under her bed. Often named one of the boys in the Institution. Would take her fore-fingers and thumb, arrange in a circle, hold to her nose for long periods as though smelling something, then rise, throw her shoulders back and rapidly walk away as though she had an objective. Early in year 1934 became very excitable; necessary to take her out of school where she had learned to write her name, and take part in other activities on pre-primary level. Repeatedly asked to go and stay with the boys. At other times said certain ones were after her. In June was permitted to go for visit. Continued this behavior at home. Was much worse upon her return. Would scream for hours at a time, "I want to go through"—"I want to go back." Often became so hoarse that verbalization was impossible. During this time, was extremely miserable. Everything possible was done to quiet her. Was taken for rides, given ice cream, candy, placed in different buildings, but to no avail. Finally, in August, 1934, was sent to the State Hospittal for observation. Returned latter part of September. Hospital re-

ported no psychosis but abnormal behavior. Since that time, has been fairly quiet but stays by herself, grimacing, laughing, sometimes says, "Let me alone" when no one is near. Will call and beckon attendant. When latter responds, says nothing.

Case Study No. 3—M.H., girl about 33. Transferred from Girls Industrial School to Training School over 11 years ago. Classified lower level moron. Never learned to read or write. On parole six weeks four years after admission (seven years ago), returned because of severe eruption on hands. An unfortunate disposition, high-pitched rasping voice, emphasizes her virtues by telling on others. Interpretations out of proportion. First years at Institution, usually occupied position of trust such as assisting employees in clothes-room, responsibility for cleanliness of portions of the building where she stayed. Manifested keen interest and delight in her work but maintained superior attitude toward other girls. Prone to make reports which, at times, were taken perhaps too seriously by employees, regarding behavior of others, which did not promote popularity but drove others from her. From external attitude there was no indication of a handicap in this. A few years later, 1930, was placed in school building to work. Here again, moved about on superior plane, not only reporting misconduct of children but of teachers and visitors in the building. In privacy of the office stated clearly her disapproval of teachers who wasted paper, nails, etc. Reported certain visitors, particularly men, for aggressive acts. Now a decided change in attitude of other children toward her. Realizing their own welfare was not at stake, they viewed her behavior with disdain, then detached amusement. During year 1932-33, began to forget some of her duties, never neglected them. Gradually built up elaborate story centering around certain doctors and nurses she knew in her community. These people exist in the flesh but were not concerned with her. About this time introduced a husband. Now believes she was reared in a hospital by nurses and doctors. Gradually all of her family connections have been raised one by one to a high level of social and economic standing. Any time of day, no matter what she is doing or to whom speaking, she radiantly gives some information regarding activities of someone in her imaginary world. This level of feeling is not maintatined at all times. Has periods of depression, may refuse food, will sit for long periods paying no attention to surroundings. On one occasion polished one piano key for an hour. Another time stood rubbing a pitcher with cloth for similar period. During recent psychometric examination, when failures were evident to her, quickly referred to successes in other activities or explained failures. When she could not make change, buying 12c worth of candy from 15c, explained she always changed her money before buying. "My husband always told me to change my money—lots of times, he would order himself." History shows that mother was of inferior intelligence. Only under pressure does she recognize the fact that she ever had a mother, evading by saying, "I was raised by doctors and nurses." Mother spent some time in State Hospital, gave birth to illegitimate child. Social worker, 10 years ago, recommended that girl not be returned to her community, as subject did not approve of home conduct and rejected her family. In present mental state she has a glorious background but is not able to hold this at all times. Then she descends into depression. This alternating reaction is known as the catatonic type in well-defined cases of mental illness. At present, one could not make such a diagnosis of her.

We call attention to psychotic trends in certain kinds of speech defects more commonly found among sub-normal children than normal. Dr. Wallin states: "It is not surprising that there should be a close correlation between speech defects and mental defects. In view of the fact that the mechanism of speech is highly complicated, involving the harmonious integrated action of a number of delicate anatomical, physiological and mental adjustments." Such defects are found in children and adults of high intelligence, the theory being that it is muscular ataxis due to psychic inco-ordination, special reference being made to stuttering and lisping. One anomaly of speech is echolalia. Hollingsworth refers to this "curious tendency found in defectives who are mentally at what Binet calls 'the dawn of speech' to repeat or echo what is

said to them or in their hearing." With the development of attention and memory, in the young normal child, this gradually gives way to the formation of phrases and sentences which have meaning to him and those about him. Some psychologists and psychiatrists are not content with assigning this abnormality to arrested development alone but are of the opinion, from research, that it does not appear as a single symptom. Dr. Martz,—"In any event, most of these children will show certain eccentricities or disturbances of the mind beyond a simple hypophrenia. If they are not actually psychotic, they nevertheless reveal such signs and symptoms as are indicative of a psychotic-like condition. Many recent investigators, such as Greene, Richmond, and Earle, have drawn attention to the frequency with which supposedly feebleminded children are found, upon careful examination, to have either a true psychosis or a fragmentary psychosis. Furthermore, it will be noted that relative mental status of these children is not always constant, as one might expect among mentally deficient but slowly changing, generally in the same direction of regression or deterioration. In these low-grade schizoid cases, the echolalia is not necessarily an outstanding factor but rather one in a whole chain of distinct symptoms which enter into the clinical picture."

Case Study No. 4.—A.B. Boy 13, admitted to Institution 2 1-2 years ago, then 11 years old. Unable to co-operate in psychometric examination because repeats what is said to him. This not only occurs in a normal setting but at the building. If he wants anything, makes a noise but is able to repeat verbatim in a meaningless monotone anything that is said directly to him. Does not repeat parrot-like conversation heard while in a group, as he appears concerned with himself. Has a tendency to be withdrawn (schizoid), will get up and run about the room as though obeying a compulsion. The ill defined erratic movements exhibited in habit-training class have given way somewhat to order. Continues to show distress both in school and at the building. With the palms hits his head in rapid staccato manner. Often takes hands of attendant or teacher as though trying to reveal some inward feeling. Is very fastidious about his clothing, taking extraordinary care in arranging it at night. Refuses to wear clothes not properly repaired. Sneaks into dressing room and secures things that suit him. Will not take sox that do not match. Can bathe and dress himself. In every respect, is the cleanest, neatest boy in his building. If things go wrong on playground, runs to an attendant, buries his face in her lap, makes a noise. After they investigate, he is all right. This condition is known as echolalia, but there are other symptoms beyond this in the clinical picture which betray abnormality.

The following represents a case of speech anomaly much more benign in character:

Case Study No. 5—C.Q. Admitted to Institution age 12, four years ago, now 16. Unable to get psychometric rating. Conversation consists of isolated words, few in number. Accompanied by elaborate gestures and facial expressions. Why he does not talk is unknown. No evidence of impediment, articulates and enunciates clearly words that he uses, and from his behavior evidently understands many other words. The following illustration, chosen from many, is proof: One time, broke a victrola record. When reprimanded by School Principal, registered distress in facial expression. While talking, Principal fitted broken pieces together. The expression of anxiety gave way to delight; pointed to the record and said, "Joe" (boy who did repair work), at the same time pointing in direction of shop. Then spanked himself, put his arm affectionately around Principal. Interpretation: Repair record, punish him (although not punished in Institution, evidently had this experience before arriving), then make up,—everything all right.

Abnormalities of behavior can be traced through all levels of psychological classifications, sub-normal, normal, and super-normal intelligence, not limited to inmates of Institutions. Through every strata, regardless of intelligence, there are those individuals who make inadequate response to their environment. The affective side of life supersedes the intellectual. Therefore such individuals and those with nervous disorders of pathological nature are anchored to lower levels of efficiency and in so far as their total response is concerned, may as well be defective in intellect. Even though the psychological rating is relatively high, these in-

dividuals operate on a comparatively low level of efficiency and cannot be properly trained in the conventional schoolroom; unless the school is designed to fit their individual needs, the classroom will be in disorder and they regress.

In the Institution we have one little girl, age 11, dull normal, who has to be alone for practically all of her schoolwork. She is a hyperactive, dramatic little figure who initiates a colorful environment if it does not appear naturally. Ethics and codes are unknown to her. In the past has built strong defense mechanisms to meet attacks made upon her when she misbehaved. Her characteristic reaction has been, when reprimanded or given a negative reply to her request, to run away, violently attack someone or destroy something that is nearest her.

The following case study represents another girl of comparatively high intelligence who has been unable to maintain her equilibrium either in society or in the Institution, as well as some others of much lower intelligence rating:

Case Study No. 6—L.T.—girl 16 years 6 months. Admitted over 6 years ago. Dull normal. On Achievement Tests, all grades above 7th (almost 10th in literature) except artithmetic, grades 3. Plays third and fourth grade music on piano. Memorizes well. Improvises. Plays mouth harp and dances. If one could stop there! She is a bundle of contradictions. From October to December, 1928, 9 years of age, hospitalized at Children's Hospital, Detroit, where family were for a short time. Both parents natives of this state. They made following report: "Diagnosis: Chorea and Endo-carditis. Patient extremely nervous when admitted to hospital. During stay told of hearing voices from the wall at night talking about herself and doctors attending her. Refused to say what she heard but insisted she heard them talking, also that she heard knockings on the wall." After family returned to South Carolina, psychiatrist from State Hospital urged that application be made to State Training School. Then began a bombardment from parents, social workers, teachers. Finally, petition signed by 7 members of County Delegation. Sent from office of Probate and Children's Court with following reasons for immediate admission: (1) She had been caught stealing; (2) Had to be removed from Special Class in School, gave so much trouble; (3) Ran away, picked up by police; (4) Had been to Salvation Army begging, taken home by them. In addition to taking things, telling stories, etc., she is never quiet. There are long drawn-out audible sighs, queer noises such as clearing throat, coughing, jerking in various parts of body. These do not always appear at one time. One gives way to another. She cries, screams, curses when excited. Because of her tendency to leave the Institution, which she has several times done, it is necessary to keep her under constant supervision, under which she chafes. It is a vicious cycle. She probably runs because of her restlessness. Therefore, must be closely supervised, which increases tension. She is good-natured and affectionate but even when showing such disposition, may have a pair of scissors concealed preparing for liberty. Will voluntarily promise (no one requesting it) never to do that way again. It has been proven when at liberty while at home or away from the Institution without leave, that she did not make a constructive move. In fact, it was her overt behavior that revealed her identity. She has what might be intrapsychic ataxia, inco-ordination between intellect and emotional functioning. Because of her strong delight for music and being an exhibitionist, piano and dancing are comparatively easy. Little or nothing has been said to her about practice, although it is necessary to keep a girl in the room with her during such periods so she won't have the piano in her pocket when she leaves. On one occasion was found with the top off, ready to go down inside. Another time plundered cabinet in the room and took pair of scissors. Unless door is closely guarded, runs out and explores or leaves building.

The average person, even the learned, does not have patience with the child who has ability to learn and won't behave. If he can learn this, why can't he learn that? Why does he tell stories? Why does he steal? Why is it that he does not respond to talks or even severe punishment but does the same things over that he has promised not to do? Children who present abnormal behavior should receive attention from doctors, psychiatrists, or psychologists during the incipient stages. If they can-

not be adjusted in homes and public schools, they should be sent to an Institution before they become battle-scarred with multiple undesirable reaction patterns that take years to undo. Training such children is not an exceedingly difficult problem if they are in very small groups. Information must reach them through any of the sense organs that prove the best avenue for carriage. The formal, conventional schoolroom is no suitable place for them.

There is a large group who move quietly through our training department, evincing no contra-behavior, or feeling, toward work. They seem pleased with the opportunity to learn all they can. Such children could be trained in the public schools if those institutions provided proper kind of training for them and if they had good homes. Both groups of children mentioned above are given standard achievement tests each year. Their rating are very irregular, —example, G 7 reading, G 6 history, G 8 spelling, G 4 arithmetic, etc. It is surprising how far some of them can go when unleashed to advance at will. This uneven classification is not peculiar to sub-normal children, as has been proven with progressive school methods with normal and super-normal children. There is another large group in training who are potentially incapable of assimilating any kind of academic work. Aside from aesthetics, it is economy to establish and perpetuate clases for this type. It took about five years for one boy to keep dry long enough to sit in class. Now he draws pictures, says little nursery rhymes, keeps his clothes buttoned in class and at the building, looks forward to the school period, expresses delight to matrons on returning to building. He might still be sitting on the floor rocking back and forth in wet clothes but is about as independent in his environment as you or I in ours. Another group, incapable of doing academic work, are given more complex forms of handwork and recreation. In the Institution, four groups receive training,—stable, unstable, manual group, habit-training group. We use handwork of all kinds, music, dancing, recreational activities, not only to develop skills but as therapeutic measures with individual approach, to build up self-respect and confidence through doing one or more things well. This does not necessarily imply special ability in these skills but special interest. It is the usual experience of a layman visiting the Institution, after seeing completed handwork, hearing a group singing a cantata in three or four parts from memory, to conclude that mentally defective children have special aptitudes. This is an erroneous conception. Memory of this particular kind (rote), accomplishment of activities requiring skills in motor co-ordination, does not involve the higher thought processes in which they are deficient. Saying it another way, these children might be unable to understand their environment to the extent of being able to maintain themselves independently of society.

How and What Defectives Learn—Those in higher levels of intelligence, but emotionally handicapped, have been discussed briefly above. Can mental deficiency be overcome? With primary amentia, due to inferior germ plasm, heredity,—no, but they can be trained if the intelligence is high enough and there are no emotional handicaps, even though the ceiling be low. Secondary or pathological cases are always doubtful. In some of them, medication, surgery, glandular and nutritional treatment may accomplish much. These individuals often profit by well-rounded manual and physical training. With the third group, who behave abnormally but whose intelligence rating is comparatively high, or even normal, emotionally unstable, the chances for rehabilitation are fair, particularly if taken in time.

Contrary to the prevalent idea of laymen, an institution does not consist of a regimented, gelatinous, negative mass, unaesthetic in appearance, which sooner or later dulls the wits of those who care for them. On the other hand, the entire population presents an interesting, colorful, mosaic design which challenges ingenuity in the interpretation and meaning of its components. To those with a flash of humor, a flare for research, coupled with scientific training, these individuals,—like all humans,—make life interesting.

DISCUSSION

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Dr. Whitten has brought to us a great deal of valuable information in the time allotted. He has dealt with the subject in an instructive manner and his presentation of the subject is extremely interesting.

In regard to testing the intelligence of the individual, there are various methods employed. The Simon-Binet test is greatly used. These tests are of value, however, only when used by one who has had training in their use. Very little value can be attached to the information obtained when the tests are made by one who is not qualified.

Feeblemindedness, as stated, is a congenital condition, or it may be the result of trauma to the nervous system or severe illness in the early years of life in which there results an arrested development of the mind. It is not considered an acquired condition; where, on the other hand, the psychoses are acquired. The lack of intelligence in the feebleminded is due to the lack of development, while in the psychoses it is due to a deterioration of the mind.

The mentally sub-normal individual in many instances has the same motivation or desires as the normal individual; however, is not capable of obtaining his desires according to the demands made upon him by society. The feebleminded individual has difficulty in adapting himself to the demands of society. It is very difficult to train him and often many of his kind become delinquent. It has been stated that there seems to be no question there is a considerably greater proportion of persons of low intelligence among the delinquent than among the non-delinquent population.

Dr. Whitten has presented six very interesting cases. These cases present symptoms which are suggestive in most cases of some psychoses. In regard to psychoses among the feebleminded, many cases do develop distinct psychoses and are placed in some psychotic group; for example, psychosis with mental deficiency. It is possible that a moron will develop into a case of dementia praecox or into some other type of mental disorder. Certain authorities claim that a large percentage of feebleminded individuals have epilepsy, therefore one can readily see that a feebleminded may develop an epileptic psychosis.

To many it may seem that feeblemindedness is a hopeless condition. If one will take into consideration the home, the neighborhood, the school and the environment and will give these mentally sub-normal individuals a chance, proper training and special instruction he will find that many of them can be helped. Little can be expected in the home, because the majority of the parents are feebleminded and are incapable of creating a good environment. Most of the help must come from the schools and the community. Employment and recreation should be provided. If the feebleminded become problems and are unable to do satisfactory work under special instructions, then they should be placed in some institution and given special care and instruction.

THE CARE OF ACUTE HEAD INJURIES

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In a discussion of "The Care of Acute Head Injuries," we have to appraise the subject with its rapidly increasing importance. Our highway accidents are responsible for a great increase in head injury cases.

Last year there were 36,400 automobile accident cases. The National Safety Council announced 99,000 accidental deaths for 1935. The majority of these traumatic deaths are due to injury to the head.

Swift states there are approximately 112,000 cases of skull fractures annually in the United States.

We have seen a great change in the care of head injuries in the last twenty years. The medico-legal aspect of these cases has assumed considerable importance particularly in regard to keeping careful records.

Let us first consider the less serious head injuries. Lacerated wounds of the scalp should all be treated as infected wounds. The wound should be loosely sutured and drained. In those cases where tight sutures are necessary to control hemorrhage the suture should be removed within forty-eight hours.

The stab wounds inflicted with such instruments as ice picks are becoming more common and are rather infrequently recognized. There is little external evidence of the small wound of entrance. The patient is frequently under the influence of alcohol, and we are perhaps prone to attribute his condition to intoxication. These wounds should always be considered as potentially dangerous. We have had cases in which the pick penetrated the brain with no evidence of paralysis or any manifestation of injury to the central nervous system. A number of cases have been reported from routine necropsies by the office of the Chief Medical Examiner (2) in New York City.

All wounds of the head where there is evidence of soil contamination should receive the prophylactic dose of tetanus antitoxin because tetanus following wounds of the head is more likely to be fatal.

A craniocerebral injury is the most serious injury of the head. It is in this type of injury

that so much has been done in recent years by conservative treatment, and head injuries should be considered serious until proven otherwise. All patients with acute head injuries should be quietly admitted to the hospital, or in some cases should be kept at a home near the scene of the accident. The less the patient is moved in the first twelve to twenty-four hours the better it is for him. We should not allow friends or meddlesome neighbors to cause us to subject our acutely traumatized head cases to an early unnecessary and sometime valueless x-ray examination. This can be done at a later and safer time. A most important factor in the handling of these cases is the choice of a nurse. She should understand the psychology underlying the recovery from head trauma.

The control of visitors and family must be considered. They should not be allowed to discuss the patient's injury and possible future disability. Post-traumatic psychosis or hysteria is often produced by some suggestion implying permanent disability. Let us remember that an injury to the brain leaves for a time a sick mind capable of running the gamut of imagination.

Because of the various degrees of severity the treatment of craniocerebral injuries cannot be standardized. I believe that each case is a case unto itself.

In order to treat these cases properly, a bedside study of the patient should be made. More can be learned in the first few hours concerning the prognosis and after treatment of the patient than at any other time. It is in this period of five or six hours that we must try to determine if there is an extradural hemorrhage, for many authorities believe extradural hemorrhage is the only indication for an early operation. An important point in the diagnosis of extradural hemorrhage is a lucid interval between the initial and subsequent loss of consciousness. The patient is at first unconscious or semiconscious, but later gets up, walks around, and then lapses into unconsciousness again. He has a dilated or fixed pupil on the same side as the hemorrhage. The patient may have paralysis beginning in the face and extending to the arm and possibly to the leg. Convulsions may also follow in the same order. Such a patient should have an immediate subtemporal decompression and a ligation of the middle meningeal artery or some of its branches.

In craniocerebral injuries increased intracranial pressure is always due to hemorrhage or edema. There are varying degrees of brain trauma causing intracranial pressure(3). Let us think of the head injury where there is no fracture demonstrable as a "black eye of the brain." We have seen a slight blow cause minute petechial hemorrhage around the eye, and so the same condition in the brain gives the picture of concussion. The concussion cases usually clear up within a few hours or few days and the only treatment necessary is rest.

In the more severe cases the surgeon should determine how completely nature is compensating for the increased intracranial pressure. Space compensation is the principal function of the cerebrospinal fluid. We have seen large tumors removed from the brain where this physiologic compensation of cerebrospinal fluid had taken care of the patient as the tumor grew and done it so well that the patient was practically symptomless.

It is the duty of the physician to observe this degree of compensation, noting particularly the following:

1. The state of consciousness of the patient, and this is most important of all data. The fact that the patient is unconscious means that the cerebrospinal fluid is not able to compensate for the pressure. The depth of the coma indicates the degree of seriousness of the patient's condition.

2. Restlessness is a symptom that might tempt one to give large doses of morphine. This would be the same as masking the symptoms in an acute abdominal emergency.

3. The pulse rate will remain slow and regular as long as the intracranial pressure is being compensated. A very slow pulse, around 40, or a pulse that is changing from 60 to 100 every few minutes means a losing battle for compensation.

4. The respiration remains slow and regular as long as there is compensation, but as compensation becomes broken the respiration becomes rapid, shallow, and irregular. Cheyne-Stokes respiration indicates marked intracranial pressure.

5. The change in temperature is a valuable

guide. A rectal temperature should be taken every thirty minutes. When the temperature remains under 102, the pressure is being compensated—each degree above that means increasing danger.

It is in those patients with fracture of the skull and increased intracranial pressure that a most careful and persistent study should be made. The changes in the patient's condition appear so quickly and the time for favorable action is so short that the patient's life, in a measure, depends on the capability of the physician, and by this I do not mean necessarily that a specialist should be in attendance, but a doctor who will give the patient his personal attention and act promptly upon his judgment.

The treatment of shock is the first consideration with few exceptions, and must be brought promptly under control. An emergency dressing must be applied to head wounds, but no wound repairs should be done that will further shock the patient. In some cases 50 c.c. of 50 per cent glucose solution may be given intravenously. Undoubtedly the most efficient treatment in acute craniocerebral injuries with or without increase in intracranial pressure is rest.

Those patients who show evidence of extradural hemorrhage with rapid increase in pressure should have immediate operation with ligation of bleeding vessels. This type of case represents a small per cent of the serious ones.

The cases of severe trauma to the brain with increasing intracranial pressure should be treated with rest, dehydration, lumbar puncture and decompression.

Rest means insuring a quiet room and a special selected nurse, with no unnecessary changing of clothes and baths. Under no circumstances should an x-ray of head be made while patient is still suffering from shock.

Dehydration can best be accomplished by limiting the intake of fluids to 600 c.c. in 24 hours, by administering hypertonic glucose solution, and giving magnesium sulphate. Fay(4) says: "When the pulse pressure approaches the pulse rate, that is the time to dehydrate."

I do not believe in too early and too frequent use of lumbar puncture. It should never be used during the period of shock or to relieve pressure due to subdural or extradural hemorrhage. In those cases where rest and dehydration do not relieve the symptoms of increased intracranial pressure, lumbar puncture should be done. Its repetition should be determined by the results. Do it in those cases which in your judgment are not apt to go on into medullary compression, and do not hesitate to drain 20 to 30 c.c. of spinal fluid at a time. It must be remembered the brain cannot long be subjected to pressure that interferes with cerebral circulation without causing cerebral degeneration or death.

Death is often due to pressure exerted upon the vital centers situated at the base of the brain in the region of the third ventricle, the medulla and pons.

The cerebral hemispheres and cerebellum are not so important in the continuation of life, but are quite important in the intelligent reactions and post-traumatic behavior of the patient. It is in this region of the brain that prolonged pressure causes degenerative changes that are later manifested by psychic changes, loss of mental function, and apparent paralysis and anesthesia. Damage to these centers of intelligence causes prolonged post-traumatic mental sequelae, a condition distressing to the patient and family, and often of serious significance.

Decompression is being less frequently employed—usually only for the specific purpose of removing some localized pressure, or for stopping hemorrhages. One indication for prompt surgery is a compound fracture of the skull where foreign bodies, fragment of bone, and hair may have been driven into the brain substance. Simple depressed fractures can be elevated under local anesthesia after a few days when the patient is out of danger.

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CARDIAC PAIN

By

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In considering the subject of cardiac pain at this time no reference will be made to that caused by primary pericarditis of acute infections, nor will the symptoms of syphilitic aortic disease be discussed except as related to differential diagnosis. The subject matter will be confined largely to symptoms referable to disease of the coronary arteries.

The symptoms of coronary pain are best divided into two related but distinct entities: angina pectoris and coronary occlusion. Angina pectoris as originally described by Heberden refers only to precordial pain, but in this instance the term will be used to describe pain located in any region having its origin in the heart. Angina pectoris is predominatly a disease of the middle and higher social groups and is quite frequently seen among professional people. It occurs far more often among men than women. The greatest number of cases fall into the middle and older age groups, but it also occurs occasionally in the twenties and thirties. The etiology of the pain is still discussable, but the most widely accepted theory is that it is based or coronary artery disease in the large majority of cases. Keefer and Renik (1) in 1928 critically analyzed the various theories as to the etiology of anginal pain, concluding that anoxemia of heart muscle was the only acceptable basis of the symptom. The pathology most often found is atheromatous disease of the coronary artery or the sinus of Valsalva. Syphilis produces relatively very few of the cases of actual coronary disease, but disease of the aorta may cause an obstructive lesion at the mouth of the coronary artery, producing the same effect. Aortic insufficiency with lowered diastolic pressure has been thought capable of producing sufficient anoxemia of heart muscle to cause anginal pain(1), but this mechanism is doubtful. Certain cases of rheumatic heart disease produce a real arteritis of the coronary arteries(2) with decrease in the amount of local blood flow. However, so many cases of extensive atheromatous disease of the coronaries, with almost complete obliteration of the vessels, come to autopsy without any history of angina, and, also, cases of definite angina fail to show any evidence of coronary disease at autopsy. Because of this it is reasonable to suppose a functional basis for the disease, either alone or in association with organic disease, by reflex stimulation through the vagus and sympathetic fibers of the cervical and upper dorsal ganglia. The real functional relationship of the sympathetic and parasympathetic nerves supplying the heart and coronary vessels is not definitely known. As yet in the experimental stage, further knowledge on this subject is awaited with considerable interest. Severe anemias are at times the predominant factor in the production of angina(3) and where the anemia is not the sole cause it may be the precipitating factor. Hypertension per se cannot be assigned as a cause of angina because although frequently seen in association with cardiac pain, a great many of the cases of angina occur in individuals with normal or even low arterial tension. There may or may not be a previous history of cardiac disease. There is often a history of dyspnea on exertion, but it is unusual for frank myocardial insufficiency to precede angina. It is even notable that where decompensation occurs in a patient afflicted with angina, the attacks of pain often disappear.

The classical attack of angina is easily recognized. During or shortly after increased physical or emotional stress, in a middle or old aged man, there is an abrupt onset of severe pain which is described as agonizing, vice-like, knife-like. Beginning over the precordium it radiates to the neck, left shoulder, and down the left arm. The patient is motionless, pallid, and sweating, and has a fear of impending death. The pulse is accelerated and the blood pressure is generally elevated above its usual level. There is no dyspnea, although the patient complains of a smothering sensation. The pain is severe for only a few minutes, and if the patient remains at rest it passes off, leaving slight soreness over the precordium. Within a short time after the attack the patient may appear normal and even go about his usual activities.

Angina often is quite atypical in the individ-

Read before the South Carolina Medical Association, Greenville, S. C., April 22, 1936.

ual it attacks and in its manifestations. It is these atypical cases which are clinically important from a diagnostic standpoint, as with proper evaluation of pain life saving measures may be taken. The diagnosis often depends entirely on the history and a careful inquiry should be made. Family history of some form of heart disease is frequent. Upper abdominal distress with gas after meals and on exertion is a common method of expression of coronary disease. This apparently is dependent on a close relationship of the reflex pathways of stomach and heart. The symptoms are generally referred to by the patient as indigestion. Pain of coronary disease frequently is not referred to the precordium but is felt in the right chest, the right shoulder, the anterior or posterior aspect of the neck above the fourth and fifth dorsal spine, or the left jaw. The pain may be slight and fleeting in nature or rather persistent. The discomfort may be of such minor degree that months may pass before the patient consults a physician. There is one important fact to be kept in mind; wherever the pain may be localized it comes on with exertion, fatigue, or emotional stress, and is relieved by rest.

The physical examination may or may not afford corroborative data. An associated hypertension is found in a number of cases, particularly in the younger individuals, but the heart may not be enlarged or show any evidence of muscle failure. Except during the attack the pulse rate and rhythm is usually normal. The retinal arteries often, but not necessarily, show significant changes. Patients above fifty almost always show some evidence of arteriosclerosis, but this is so widely found that it can hardly aid in the diagnosis of angina. Changes in quality of the heart sounds and a gallop rhythm, when present, give a definite substantiation of heart disease. Except in aortic insufficiency, murmurs are of no significance. X-Ray of the heart is only of value if it shows evidence of cardiac enlargement, and then this is only corroborative data. An electrocardiographic tracing is helpful in sustaining the diagnosis where evidence of myocardial damage can be demonstrated. Electrocardiographic evidence is however notably unreliable, and a normal tracing is quite consistent with angina. Levine's technique(4) of observing t-wave changes in serial electrocardiograms following the injections of adrenalin appears to offer dangers in the patient with real angina, but may be found useful in certain instances. The use of a tablet of nitroglycrine has been useful to me as a therapeutic test in vague pains in the thorax, upper abdomen, and neck. When prompt relief is obtained, even without a recorded fall in blood pressure, I become more than suspicious of coronary origin of the pain.

It is to be remembered that atypical angina is a common disease and frequently offers considerable difficulty in diagnosis. All of us have experienced the shock of seeing one of our patients develop a coronary occlusion while under treatment for dyspepsia, neuritis, or psychoneurosis. Where any doubt exists as to the nature of suspicious pain, a careful investigation and evaluation of symptoms should be made; and unless the symptoms can be satisfactorally explained, the case should be managed as angina for at least a period of time.

The differential diagnosis of typical angina rarely offers difficulty. Pseudo-angina in a psychoneurotic individual who has observed anginal attacks in a friend or relative may simulate the disease closely, but not closely enough to confuse the careful clinician. The atypical attacks must be differentiated from the psychoneuroses, gall bladder or gastric disease, myositis, intercostal neuritis, and at times arthritis of the spine. Syphilitic aortitis with or without aneurysm frequently produces substernal discomfort that must be differentiated from coronary disease. The Wassermann reaction and fluoroscopic of the chest are quite helpful. Lesions of the diaphgram may also cause pain with the same distribution as angina. Here again a fluoroscopic examination is quite revealing.

The treatment of angina varies considerably in amount and extent in accordance with the severity of the symptoms. Treatment of the immediate attack demands complete rest, administration of nitrite and, when necessary, morphine. Follow up therapy should, as far as possible, be individualized to fit the needs of the patient. In general, the patient should have an added amount of rest and should be protected from over-exertion, fatigue, and emotional stress. The habits of the patient and his daily regime of life should be carefully reviewed

in an effort to uncover any precipitating causes. Angina is notably a forerunner of the more dangerous coronary occlusion, and the patient should be definitely impressed with the importance of these measures. The question of whether the patient should be informed of the diagnosis remains a problem in each individual case. However, in most instances the patient himself soon becomes conscious of the condition and in only the exceptional case can the diagnosis be withheld for any great length of time. The diet should be bland and of relatively low calorie, particularly if there is an associated obesity. The total amount of food should be divided into five rather than three meals during the day. The fluid intake should be sufficient to prevent dehydration. Constipation should be strictly avoided without drastic purging, and mineral oil or a small morning dose of a saline laxative is useful. The drugs of the theobromine group apparently have a dilating effect on the coronary vessels (5) (6), and have a definite place in the diminution or prevention of attacks in quite a number of cases. Any contributory condition such as anemia or hyperthyroidism should receive adequate therapy. Digitalis has no place in the treatment of angina pectoris, as it has been shown to have the effect of diminishing coronary flow (7) (8). Syphilis, if present, should be treated with extreme caution, as the occurrence of a Herxheimer reaction might be fatal. The surgical treatment by evulsion of the cervical and upper thoracic sympathetic ganglia has a certain element of danger, and experience with the procedure is at present limited. There is considerable current interest in a surgical approach to all diseases related to the sympathetic nervous system(8), and the future developments may offer selected patients a greater degree of relief than medical regimes afford. Total extirpation of the thyroid has proved beneficial and is being recommended in certain selected cases(10). The operative mortality among these cases is necessarily high, the eventual outlook doubtful, and further observation of the procedure is necessary before it becomes widely applicable.

Coronary occlusion is seen with increasing frequency as the years advance beyond middle life and is a common affliction in old people with heart disease and arteriosclerosis. However, it is not uncommon below middle age and among Master's 75 cases 6 were 40 years or less(11). The disease has aroused any great interest only in the past twenty years. Rarely reported before that time, more careful diagnosis in heart disease has shown coronary thrombosis to be a common form of heart disease. Frequently diagnosed as acute indigestion in the past, it has, and continues to be, one of the principle causes of sudden death. Pathologically an anemic infarct of the heart muscle; it is, except in rare instances, dependent on a thrombus in situ and only rarely is an embolus from a distant focus found. The left coronary artery or one of its arborizations is the most frequent site of the thrombus. The size of the infarct depends on the site of the thrombus and the extent of the collateral circulation developed. An actual rupture of a coronary artery may well cause the same effect, but such a condition is very rare. By far the greatest number of infarcts are dependent on degenerative atheromatous disease of the coronary artery or the contiguous portion of the sinus of Valsalva. Syphilis and rheumatic heart disease play only minor rolls. Hypertension cannot be assigned as a primary cause of the disease except as it may be the cause of the coronary artery disease and place the heart under difficult working conditions. The incidence of previous anginal attacks is quite high, but in a small percentage of cases an occlusion is the first indication of coronary disease. Frank cardiac decompensation precedes coronary occlusion at times, but the more frequent premonitory symptoms are angina, slight dyspnea or exertion, orthopnea and indigestion, either singly or in combination. A large percentage of cases have their onset while at rest or after only moderate exertion. Apparently food intake is closely related to the occurrence of coronary occlusion, and in Phipps'(12) series of 437 cases 50 per cent occurred within an hour after eating. A small percentage of cases, highly fatal, occurred during sleep.

The pain of coronary occlusion, varying considerably in its severity, is usually very intense, but occasionally may be only of slight degree. The distribution of pain is the same as in angina pectoris, but is most often confined to

the precordium and left arm or the upper abdomen. The patient with a coronary occlusion in contrast to angina pectoris is usually restless or even excitedly active. Dyspnea, cyanosis and some degree of circulatory collapse is customarily present. Vomiting is frequently an accompaniment early in the course and may persist for several days. Where the infarct is quite extensive, circulatory collapse, pulmonary oedema, and shock rather than pain will be the presenting symptoms. Small infarcts, because of the mildness of the pain and paucity of circulatory collapse symptoms, are often passed up as simple angina. The pulse may be rapid but is often quite slow. The area of cardiac dullness is not necessarily increased. The heart sounds usually are of poor quality, the blood pressure falls below its usual level and in extensive lesions is quite low. Pericardial friction is heard in about one third of the cases in twenty-four to forty-eight hours. After a subnormal period the temperature rises to about 100 degrees F. for a few days. Typical electrocardiographic changes as described by Pardee (13) appear within 24 hours and persist for a prolonged period of time.

The course of a coronary occlusion is quite variable and necessarily depends on the location and extent of the resultant infarct and the degree of collateral circulation that can be established. The onset may be quite abrupt or more gradual with increasing symptoms over several hours. When the occlusion is sufficiently large, death is almost instantaneous or follows within a few hours. In less extensive occlusions the patient may linger on a few days or a week before death. But in most instances if the patient survives the first stormy 24 to 48 hours, the symptoms tend to subside, the heart establishes a more stable function, the blood pressure tends to rise, and the chances for recovery are good. Most clinicians reporting cases cite a mortality rate of 35 per cent to 65 per cent. However, because of wider interest in the disease and the recognition of the mild cases, recent reports call attention to a much lower mortality rate and one author (11) reports the surprisingly low rate of approximately 10 per cent. Recovery is accomplished by replacement of the infarct by fibrous tissue leaving a firm scar. Restoration to a considerable degree of health over a period of several months to years is not inconsistent with the disease, and White (14) reports one case enjoying relatively good health for 17 years. There are some rare instances where patients who have been suffering from recurrent angina are definitely improved following the obliteration of the offending artery and its transference into scar tissue. However, the patient who recovers from one coronary occlusion has a grave tendency to the development of other similar lesions, and the rate of recurrence is high.

There are three complications which are notable in the cases of coronary occlusion which survive the acute phase. The development of mural thrombi and embolic phenomena may occur within 48 hours to two weeks and, depending on the location and size of the embolus, offer a varying degree of danger. Sufficient heart muscle may be permanently damaged so that chronic myocardial failure will result and the patient become a chronic cardiac cripple. Rupture of a ventricle is infrequent and may occur several weeks or longer after the acute phase and is necessarily fatal.

The differential diagnosis of the typical case and its course should offer no difficulties. The immediate differential from angina is made on the restlessness of the patient, the prolongation of the pain, and its lack of response to nitrites. Fall of blood pressure, cyanosis, and circulatory collapse do not occur in angina. In cases of sudden death clinically ascribed to coronary occlusion, autopsy at times discloses rupture of an aortic aneurysm or the heart itself. When the pain of coronary occlusion is confined to the epigastrium, it may simulate an acute surgical condition. A previous history of angina, knowledge of previous blood pressure levels, and an electrocardiographic tracing are quite helpful in settling the problem. Also helpful is the fact that in coronary occlusion the pain although constant is subject to exacerbations at intervals of several minutes to an hour. Cases of sudden circulatory collapse with pulmonary oedema should always be suspected of having a coronary occlusion although there is no complaint of pain. The occurrence of persistent pain in other than the precordial portion of the thorax, in any patient with known heart disease, should be viewed as definitely

suspicious, and a precordial friction and slight fever should be looked for. The more frequent use of the electrocardiograph will reveal evidence of coronary occlusion in many cases that would otherwise be overlooked.

Treatment of a coronary occlusion is of the emergency type. Sufficiently large amounts of morphine should be administered to control pain and restlessness. The initial dose should be half a grain, repeating with a smaller dose as necessary. Caffiene can be given to counteract the depressing effect of morphine on the respiratory function. The use of nitrites has been considered harmful by some clinicians (15, 16) and as they certainly offer no relief should be withheld after the diagnosis is established. It is difficult for the physician to withhold adrenalin in those cases with severe collapse symptoms, but the drug may be harmful in overstimulating a myocardium severely damaged. Digitalis certainly has no efficacy in the early treatment of the disease, and it may be harmful, as it has been shown to act as a constrictor of coronary arteries(17). When pulmonary oedema develops, atropine is useful and a venesection of 250 c.c. or more may be valuable. The patient should be placed in a sitting position so that respiratory motion is facilitated. Blankets and heat may be necessary on the extremities, but only light covering should be allowed over the thorax. The administration of oxygen may be gratefully accepted by extremely dyspneic patients. Nothing but cracked ice should be given by mouth for 24 hours or longer and the bowels kept immobile. Following the acute phase the patient should be kept at absolute rest for six weeks or longer. Opiates or sedatives should be given as needed. The diet should be bland, of low calorie, and taken frequently in small amounts. After three to four days give mild laxatives and small daily enemas to prevent straining at stool. The patient is often quite dispondent and should receive considerable encouragement and moral support. The theobromine group of drugs are probably of some value as a coronary dilator(5) in the further treatment. Digitalis should again be avoided unless congestive failure supervenes. After recovery the patient should lead a fully protected life, avoiding any strenuous physical or emotional strain, and the same precautions as to diet should be taken as in the case with angina.

Summary: The various causes of angina pectoris on a basis of anoxemia of heart muscle have been discussed and the importance of recognition of the disease in its atypical form stressed. Treatment should be instituted principally along the lines of protection from physical and mental stress. The theobromine group of drugs may be useful and digitalis is to be avoided.

Coronary thrombosis as an important form of heart disease is being increasingly recognized, and with the institution of proper therapy the mortality rate observed is considerably lower than it was formerly thought to be. In contrast to angina pectoris the patient is active, pain is prolonged, and evidence of circulatory collapse is usually present. The importance of morphine rather than nitrites is to be stressed. Prolonged rest and attention to diet should be prescribed after the acute phase.

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DISCUSSION

George R. Wilkinson, Greenville:

The reader has made it quite plain that pain in the heart is due, so far as our knowledge goes, to two great causes only: namely, angina pectoris and coronary occlusion. The mechanism for the pain is chemical, induced by mechanical means. The idea that pain can be produced by pressure alone holds for the heart as well as it does for the rest of the body. Whether it be a spasm that shuts off the blood supply or a mechanical device in the nature of an embolus, the pain comes from the lack of blood to the part. The chemical change that comes from the reduced amount of oxygen in the tissues produces a chemical pressure which in turn causes pain.

The treatment is directed toward maintaining an even flow of blood. First, the demands for more blood are reduced, or mitigated. Second, agents are used that increase the flow during the coronary crises.

In the experience of the discussor, the following disorders have, at times, produced pain which in some measure simulates the pain due to coronary disease in general: mediastinal, lung, and oesophageal tumors; diverticuli of the oesophagus; diaphragmatic hernias; pulmonary embolus; cervical arthritis and upper thoracic arthritis; pleurisy and pleurodynia—all above the diaphragm. Below the diaphragm, gallbladder disease first and foremost, duodenal disease, and diseases of the pancreas.

This is indeed a timely subject and of especial interest to physicians themselves, since coronary disease is so often the cause of their demise.

NEWS ITEMS

Experiments by Dr. Robert B. Taft with radium detection devices, which have brought him national and even international recognition, recently have earned for him the silver medal of the American Roentgen Ray Society, an exclusive organization made up of about 475 of the foremost radium and X-ray experts in the United States and Canada. Dr. Taft is President of the South Carolina X-ray Society, and a former Vice President of the Radiological Society of North America.

Dr. R. C. Bruce, President of the South Carolina Medical Association, visited the Association Headquarters at Seneca, Wednesday, October 21.

Precautions to safeguard the health of students both on and off the campus are being taken at the University of South Carolina. The City Health Department of Columbia has agreed to inspect boarding houses near the University at which students are accustomed to take their meals. Those passing inspection will be placed on an approved list. Classrooms, dormitories, rest rooms, and cafeterias on the campus will be inspected also. A faculty student health committee has been appointed to promote this work. Among the members of the faculty student committee are Dr. N. B. Heyward, University Physician, Chairman, and Dr. Isadore Schayer, Professor of Hygiene and Sanitation.

Miss Eleanor Bishop, daughter of Mr. and Mrs. Littleton Jackson Bishop, of 199 Grove Street, Montclair, was married October 9 to Dr. Thomas Martin Peery of Charleston, S. C., son of the Rev. Dr. John C. Peery of Newberry, S. C., and the late Mrs. Peery. The ceremony took place at 8:30 o'clock at St. John's Protestant Episcopal Church, Montclair, New Jersey. Dr. Peery is Assistant Pathologist at the Medical College of the State of South Carolina.

Dr. Edgar A. Hines, Secretary of the South Carolina Medical Association, delivered an address before the faculty and students of the Western North Carolina Teacher's College, Cullowhee, N. C., October 22, on Medicine as a Vocation.

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OF THE
South Carolina Medical Association

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OFFICE OF PUBLICATION
Medical Building----------Seneca, S. C.

Subscription Price----------$3.00 Per Year

Entered as second-class matter February 9, 1916, at the post office at Greenville, South Carolina, under Act of March 3, 1879.
Accepted for mailing at special rate of postage provided for in Sec. 1103 Act of October 3, 1917, authorized August 2, 1918.

NOVEMBER, 1936

DEATH OF DR. D. J. BARTON

The sudden passing of Dr. Barton, President of the Anderson County Medical Society, has caused wide spread sorrow over the Piedmont section of the State and elsewhere. Dr. Barton was a staunch and militant member of organized medicine. He served as Secretary of the Anderson County Medical Society for a number of years and was rounding out his term as President of the Society at the time of his death. He was keenly interested in public health and in the progress of medicine and surgery. He was one of the organizers of the Piedmont Post Graduate Clinical Assembly which recently closed such a successful session in Anderson and he had plans in mind for the extension of the scope of the Assembly throughout the South Atlantic States. Dr. Barton was solidly behind the work of the State Medical Association and ready at all times to promote its best interests. He was a genial gentleman and enjoyed a wide circle of friendships both within and without the profession. He was a graduate in pharmacy, having practised this profession prior to his study of medicine. He was a graduate in medicine of the Medical Department of the University of Georgia. He was born at Townville in Anderson County and was 55 years old.

FOUNDERS DAY MEDICAL COLLEGE

The celebration of Founders Day at our State Medical School should continue to attract larger numbers of the profession each year for with experience the programs become more varied and attractive. It would be a fine gesture of appreciation if several hundred doctors should attend the clinics and the various other features of the program at the college in Charleston, November 5. Such an effort would greatly encourage the Board of Trustees and the faculty of the college in their commendable efforts to raise the standards of medical education in the South. The South Carolina Medical Association from its organization in 1848 has shown a keen interest in the affairs of the College. There has been a splendid reciprocal relationship existing between the two organizations. The Journal has benefited in large measure by the scientific contributions of the members of the faculty. It would be a very enjoyable occasion indeed if a large number of the old grads should attend the exercises along with the students of the college. Most of these young men come from our own state and are well known to the physicians in the various communities from which they come. A South Carolinian does not have to be urged very much to take a day off and

spend it in the delightful environment of the City by the Sea.

A glance over the program discloses its practical aspects for the busy doctor who may be able to leave his practice for a brief period. The special guest this year is Dr. Reginald Fitz who comes from one of the great medical centers of the world. Dr. Fitz is Professior of Medicine at Boston University, and a graduate of Harvard. He was formerly House Officer at the Massachusetts General Hospital and has been Resident Physician at the Rockefeller Hospital, New York. He was at one time on the Staff of the Mayo Clinic. He was Associate Professor of Medicine at the Harvard Medical School and as a medical historian and clinician is well known throughout the country.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

FOUNDERS DAY NOVEMBER 5, 1936

PROGRAM

Founders Day celebration at the Medical College, which has in the past proved so successful, is expected to be an interesting occasion this year. The Medical College extends a cordial invitation to all physicians to attend the celebration.

Morning Clinics—Roper Hospital

9:00 to 9:30—Fractures About the Elbow. By Dr. F. A. Hoshall, Charleston, S. C.

9:30 to 10:00—Results of Surgical Treatment in Tuberculosis. By Dr. W. A. Smith, Charleston, S. C.

10:00 to 10:30—Endometriosis. By Dr. A. J. Buist, Charleston, S. C.

10:30 to 11:00—Heart Disease of Nutritional Origin in Children. By Dr. J. I. Waring, Charleston, S. C.

11:00 to 11:30—Hypertrophic Arthritis. By Dr. George Wilkinson, Greenville, S. C.

11:30 to 12:00—Importance of the Time Factor in Peritonitis. By Dr. R. G. Doughty, Columbia, S. C.

Luncheon—1:00 P.M. — Medical History Club, Fort Sumter Hotel.

Afternoon

4:00 to 5:00—Medical Clinic. By Dr. Reginald Fitz, Boston.

Evening

8:00—Banquet, Fort Sumter Hotel.

Founders Day Lecture: "From Cow Path To State Road: An Historical Ramble." By Dr. Reginald Fitz, Professor of Medicine, Boston University.

Dr. Fitz is prominent in medical circles and a member of the Council on Medical Education of the A. M. A. He will make a brief address at a luncheon sponsored by the Medical History Club of Charleston. Visiting physicians are invited.

X-Ray Apparatus on Display at the Medical College

The William Henry Johnson memorial museum of X-ray apparatus has been instituted on the second floor of the Medical College building said to be the second X-ray museum in a medical college in the United States.

Containing apparatus dating back to the 1900s, only a few years after Roentgen discovered the ray in 1895, the museum was opened for inspection following a recent meeting of the Medical History club, an organization of local physicians.

Apparatus is shown that was used here by the late Dr. Johnson, Dr. Fleming McInnes and Dr. Robert Wilson. It covers the field to 1920.

Later the club hopes to add more apparatus, and also photographs and sketches of pioneers, both in Charleston and in the field generally. Dr. Hillyer Rudisill, Jr. was largely instrumental in collecting the apparatus for the club.

Dr. Wilson, Dean of the Medical College, read a sketch of Dr. Johnson at the meeting of the Historical Club. His son, Dr. Robert

Wilson, Jr. read a paper on Eighteenth Century Medicine.

Increased Appropriation aids Medical College

The increased appropriation for the Medical College secured largely through the efforts of the medical profession of the State has allowed the college to make some very necessary and desirable additions to its teaching staff. These additions have gone far toward reaching the suggested improvements in the college staff. It will be recalled that the committee of the A. M. A. which inspected the college last year, complimented highly certain personnel. With more money available many of the gaps have been filled and new members of the faculty are as follows:

B. D. Chinn, Ph.D. (University of Chicago) Instructor in Bacteriology.

Walter A. Stultz, Ph.D. (Yale) Instructor in Anatomy.

H. D. Bruner, M.D., (Louisville) Instructor in Physiology.

J. E. L. Rebeley, M.D. (Texas) Instructor in Clinical Pathology.

Stanley L. Levin, M.D. (Medical College of S. C.) Instructor in Medicine.

Harold Wood, M.D. (Tufts) Instructor in Pathology.

Leon Banov, M.D., well known for his public health activities and Health Officer of the City of Charleston, has been appointed Assistant Professor of Public Health.

It is hoped that as time goes on the college will increase its usefulness and standing by the addition of more instructors of the same capable type as the above mentioned.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 317 (31713)

April 17, 1936

Case of Dr. Richards, Dr. Chamberlain, and Dr. Robert Wilson, Jr.

Student Gregg (reading):

A negro man, 35 years old, admitted 9-7-35, discharged 10-4-35, readmitted 2-22-36, died 3-21-36.

History: Nocturnal attacks of dyspnoea with orthopnoea since about Jan. 1935. Unable to work since June, 1935, because of increasing dyspnoea on exertion. Swelling of the feet appeared about June, 1935, and has recurred at intervals. About Sept., 1935, the abdomen began to swell, and dyspnoea became more marked. Heart pain frequently. On digitalis therapy for some months. Cough since 1931, occasionally blood-streaked, no frank hemoptysis.

Past Illnesses: Measles, tonsillitis, influenza, rheumatism (1920). Malaria, lues (date?), neisserian infection (3 times).

Exam. in 1935: Near-normal temperature curve, pulse varied from 50 to 110, B.P. 150/0. Apex in 6th interspace 6 inches from mid-line. systolic murmur over apex, diastolic murmur over aortic area. Precordial systolic thrill. Corrigan pulse, also pulsus alternans. Urine and blood normal. X-ray of chest (9-10-35): see chart. EKG (9-11-35) Left axis deviation, premature auricular contractions, notched QRS in II and III. Inverted T in II and III. Discharged as improved.

Exam. in 1936: Temp. 96.6, pulse 100, resp. 24, B.P. 140/40. A well developed man, orthopnoeic. Pupils equal and regular, reacting normally to light and in accommodation. Chest: Dullness in both bases, especially in right. "Expiratory sounds markedly increased and coarse rales on inspiration and expiration over both lung fields, especially over right." "Some widening" of mediastinum. Heart: apical impulse in 7th interspace in anterior axillary line. To-and-fro murmur over aortic area and transmitted downwards along left border of sternum. To-and-fro murmur at aapex. "Very irregular in rate and rhythm, with numerous extra-sys-

toles. Pulse deficit present." Abdomen markedly distended, shifting dullness in flanks. No organs palpated. Pitting edema of feet and extending up onto thighs.

Lab.: Urine cloudy, insufficient for determination of S. G., alb. 1 plus, sugar, acetone and casts 0, 3 leukocytes per HPF, no RBC. Blood (2-24; 3-19): Hb. 55 per cent and 30 per cent (D); RBC -, -; WBC 5350, 8800; polys 79 per cent, and 78 per cent; lymphs 13 per cent and 16 per cent; monos 6 per cent and 4 per cent; achromia, etc., 2 plus. Blood Kolmer neg.; Blood Kline 4 plus. Blood Chemistry (3-9; 3-16): Urea N 41, 82; Creatinin 1.7, 3.6. Sputum (3 exams.): mucoid, leukocytes 3-4 plus, assorted bacteria 2-4 plus, no t.b. Abdominal Fluid (3-4; 3-16): Sp. Gr. 1.016 and 1.022; quantitative albumin 4 per cent and 3 per cent.

Course: Temp. subnormal for entire period of hospital stay, excepting for one rise to 100; about 97 for last 3-4 days. Pulse 60-90. Resp. 24-28. Little apparent change in clinical appearance of patient during hospital stay. Coupled premature ventricular contractions (or pulsus alternans?) appeared on 3-5-36 and continued until 3-9; digitalis discontinued on 3-5. 2000 cc. of clear straw-colored fluid removed from abdomen on 3-2-36, and 2000 cc. of similar fluid removed on 3-14-36. Edema did not disappear, remained orthopnoeic. Died on 3-21-36 at 1:55 A.M.

Dr. Robert Wilson, Jr. (conducting): Mr. Baldwin, will you analyze this case for us?

Student Baldwin: This man has a history of a chancre, although the duration of his infection is not known. The Kline test is four plus. There is a loud diastolic murmur at the aortic area, as well as a to-and-fro murmur at the apex. The blood pressure is 150/0 on one occasion and 140/40 on another. The pulse is of the Corrigan type. This is a fairly complete picture of aortic insufficiency of luetic origin. The high specific gravity of the abdominal fluid is somewhat hard to explain, but I believe that fluid is a transudate. The to-and-fro murmurs are probably a result of a dilatation of the heart. These factors, coupled with the edema and the pulsus alternans, indicate that myocardial failure has set in.

Dr. Wilson: Mr. Baldwin, in September 1935 there was a systolic murmur at the apex and a diastolic murmur at the aortic area, while in February 1936 there were to-and-fro murmurs at both the aortic area and at the apex of the heart. How can you explain this difference in the two examinations?

Student Baldwin: I can't explain it.

Dr. Wilson: Well, what is a possible explanation of a systolic murmur over the base of the heart? When can such a murmur be due to syphilitic disease?

Student Baldwin: Syphilitic aortitis commonly gives such a murmur.

Dr. Wilson: Mr. Brantley, do you agree with the diagnosis?

Student Brantley: Yes, I agree with the diagnosis of aortic insufficiency due to syphilis. But I believe that there must have been an infection somewhere to bring the hemoglobin down to such a low lovel. There is nothing in the record to explain it.

There was probably a dilatation of the right side of the heart to cause death. I believe that the systolic murmur at the apex was due to dilatation of the mitral ring, and that the diastolic murmur at the apex was an Austin Flint murmur, due to a functional mitral stenosis caused by regurgitation of the blood from the aortic valve over the aortic cusp of the mitral valve during diastole.

Dr. Wilson: How do you explain the cough and blood streaked sputum?

Student Brantley: I can't explain that well. I don't believe that they could have been due to heart failure and have lasted as long as five years. We cannot rule out tuberculosis of the lungs, but there is nothing else in the record to suggest tuberculosis. There was no material abnormality of the temperature curve. Tubercle bacilli could not be found in the sputum. The abdominal fluid appears to have been a transudate rather than an exudate.

Dr. Wilson: Mr. Hall, how do you explain nocturnal dyspnoea and orthopnoea?

Student Hall: This counds like cardiac asthma, and suggests disease of the aorta, probably aortic insufficiency.

Dr. Wilson: Yes, cardiac asthma occurs in aortic insufficiency, but is probably even more common in hypertensive heart disease.

Does the electrocardiogram help any?

Student Hall: The left axis deviation suggests hypertrophy of the left side of the heart. The notching of the QRS complex and the inverted T-waves may represent digitalis effect.

Dr. Wilson: You say that the QRS complex is notched; if it were also widened, what would that mean?

Student Hall: Delayed intraventricular conduction time.

Dr. Wilson: In this case we have extrasystoles; if auricular fibrillation had been noted, how would that affect the diagnosis?

Student Hall: Auricular fibrillation is very uncommon in simple aortic insufficiency of syphilitic origin.

Dr. Wilson: Mr. Pernwerth, how do you explain the precordial thrill?

Student Pernwerth: I believe that whatever produced the loud systolic murmur also produced the thrill. If the murmur was due to dilatation of the mitral ring, the same might have caused the thrill: almost any loud murmur may give a thrill.

Dr. Wilson: Let's see the x-ray. (Viewing x-ray film) Mr. Bernstein, does this film substantiate or disprove the diagnosis?

Student Bernstein: It does not disprove the diagnosis, but the marked enlargement of the heart shadow, both to the right and the left, certainly suggests pericardial effusion.

Dr. Wilson: Dr. Rudisill's report brings out enlargement of both sides of the heart, and prominence of the left upper border suggested to him that the case was probably one of rheumatic disease of the mitral valve. This film, taken in September 1935, did not suggest pericardial effusion to Dr. Rudisill.

Mr. Bernstein, how do you interpret the coupled beats of the heart?

Student Bernstein: They were probably due to digitalis overdosage.

Dr. Wilson: Will some member of the staff discuss the case?

Dr. Robert Wilson, Sr.: The x-ray picture suggests that there is disease of the mitral valve. Accepting this, we then have two possibilities: syphilitic disease of the aortic valve, with the exceedingly rare syphilitic disease of the mitral valve associated, or concurrent involvement of the mitral and aortic valves by rheumatic infection. This latter is much more common.

Student Pernwerth: Is nocturnal dyspnoea due to syphilitic aortitis or to aortic insufficiency?

Dr. Wilson, Jr.: In spite of the fact that most textbooks on medicine state that nocturnal dyspnoea is a conspicuous symptom in syphilitic aortitis, I do not believe that uncomplicated syphilitic aortitis causes symptoms. When the mouths of the coronary arteries are so narrowed that the nutrition of the myocardium is impaired, or when the aortitis extends down onto the aortic valves, or when aneurysm develops, symptoms will become apparent, but without one or more of these complications I believe that the aortitis is symptomless. Nocturnal dyspnoea develops under circumstances causing failure of the left ventricle, and hence occurs conspicuously in hypertensive heart disease and in aortic insufficiency. Rheumatic disease of the mitral valve seldom causes nocturnal dyspnoea.

Dr. Lynch: Nocturnal dyspnoea must not be due to pulmonary congestion if Dr. Wilson's statement about its rare occurrence in mitral stenosis is true. Pulmonary congestion is probably more marked in mitral stenosis than in any other disease. There is an increased carbon dioxide tension in the blood in mild states of left ventricular failure, and possibly variations in the susceptibility of the respiratory center to the increased carbon dioxide tension of the blood occur during sleep, causing the nocturnal attacks.

As you can see in the mounted specimen (demonstrating autopsy specimen), both the right and the left ventricles are hypertrophied and dilated. The endocardium, especially in the left atrium, is greatly thickened. The myocardium of the left ventricle shows numerous fibrous scars grossly. The aortic valve leaflets are shortened, thickened and puckered, as may be seen in either syphilitic or rheumatic valvulitis. But the aorta itself is quite normal, and this would be very unusual if not impossible if the valvulitis were syphilitic in origin. The mitral valve is somewhat thickened, and the chordae tendineae are shortened and thickened. I believe that there must have been a general stiffness of the whole mitral sys-

tem, possibly with an early or minor grade of mitral stenosis.

Looking backward now on this case (and it is always easier to look back and see these things than it is to look ahead to the diagnosis), I believe that this record can be explained better on the basis of rheumatic heart disease. The x-ray picture, besides showing evidence of disease of the mitral valve, seems to me to be very suspicious of a pericardial effusion (an organizing pericarditis was present at autopsy). This is very commonly seen during the course of rheumatic heart disease, and probably occurs at some time in almost every case.

The presence of cough and occasional blood-streaked sputum in a case of heart disease without active organic disease of the lungs should always cause one to suspect mitral stenosis, since pulmonary congestion is so much more conspicuous in failure of the left atrium (from mitral stenosis) than in other forms of heart failure.

The electrocardiogram showed evidence of severe myocardial damage; this would be much more common in rheumatic pancarditis than in syphilitic heart disease, although it could occur in the latter.

And finally, as Dr. Wilson has already pointed out, if the x-ray picture is taken as definite proof of disease of the mitral valve, the chances are very great that rheumatism and not syphilis has caused this disease of the mitral valve. Syphilitic disease of the aortic cusp of the mitral valve is recorded in the literature, but in our wide experience with syphilitic heart disease here I have never seen such a case. I almost wonder if it actually exists.

The anemia could not be explained at autopsy. But it is not uncommon that such a thing cannot be explained by autopsy. We see in the morgue only the end-stages of disease, and this end-stage may be quite different from the earlier stages.

INTERNAL MEDICINE

J. H. CANNON, M. D., CHARLESTON, S. C.

WHAT'S IN A NAME?

By Geo. R. Wilkinson, M.D., Greenville, S. C.

A great deal of meaning may be conveyed in a name. For instance, Benedict Arnold is the appellation of an individual long since dead, and still the mention of his name brings to the mind of even a child in the grade school a picture of horror. The portrait of the traitor is so rarely shown that it would hardly be recognized. The names Benedict and Arnold are not uncommon, but what fond parent would christen a child Benedict Arnold.

In medical nomenclature, when it is possible, a disease is so designated that the name itself will convey an idea as to where in the body the disease exists and what the causative factor is. When it is practicable, the term is limited further in order that the disease may be more easily classified in the catalogue of ailments. Hypothyroidism is an example of a name that locates the part affected and indicates how its function is impaired .

There is the term "arthritis" which is displacing rheumatism. The word is coming into use and directs the attention to a single feature of the disease. Yet the more one learns about the disease, the more convincing it becomes that the disease affects the body as a whole and is truly a systemic disease. Why not stick to the old name—"rheumatism"—that everybody knows? The word brings to mind a picture that means too much to let it pass into obscurity or disrepute. Rheumatism, if you divide the word, does not refer to any one part; it does not classify or further define the disease; it does not direct the attention falsely. The name represents a definite disease familiar to the medical profession and the laity.

SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

"WOUNDS OF THE HEART"

The heart is fast yielding to surgical treatment. The problems connected with it are being attacked by a number of capable workers. The August, 1936, issue of the Journal of Thoracic Surgery is practically devoted to this subject. The article of most practical interest is that concerning stab wounds of the heart.

Dr. Daniel C. Elkin, of Atlanta, gives a brief resume of the history of the treatment of wounds of the heart and reports in detail thirteen cases treated by him. The history is usually that of profuse bleeding from the external wound, during which period the patient feels no evidence of injury—often continuing to fight or running several blocks. Following this there is exhaustion and collapse, frequently with unconsciousness. At this time there is generally cessation of the external bleeding. This chain of symptoms is due to a gradually developing tamponade which seriously interferes with the heart action and results in cerebral anoxemia. This condition prevailed in all of the cases reported. Fluoroscopic examination is of great diagnostic value, as the accumulation of blood prevents the normal pulsations of the heart. If necessary, aspiration may be resorted to for diagnosis or to temporarily decompress the heart in extremis. After diagnosis has been made, immediate operation should be carried out. Nitrous oxide oxygen anesthesia is preferable, as pleural injury is frequent, which necessitates that the anesthesia be given under pressure. The author finds the most satisfactory exposure obtained by reflecting laterally a flap of skin and muscle and excising two costal cartilages. The difficulty is in locating and suturing the wound in the heart. This is facilitated by removing the blood from the pericardial sac and occluding the opening in the heart with the left index finger. The suture is passed well into the muscle, but should not enter the heart chamber. The first suture provides traction as well as partial hemostasis. After control of the bleeding the pericardium is gently cleansed and the anterior opening closed. Drainage may be provided by an opening through the pericardium into the pleural cavity, but never externally. Once the patient has survived the operation, the most important factor in the prognosis is infection. In the thirteen cases reported six patients died: one did not survive the operation; two of pneumonia; one of pericarditis; one of mediastinal emphyema; and one of septicemia.

NEWS ITEMS

Dr. W. A. Sheldon, 69, prominent Pickens County physician, died at his home, Liberty, S. C., October 24. He had practiced medicine for forthy three years. He was a member of the Pickens County Medical Society, the South Carolina Medical Association, an officer of the Southern Railway Surgeons' Association, and an elder in the Presbyterian Church.

Dr. Sheldon is survived by his wife, Mrs. Hattie Norris Sheldon; two sons, W. G. Sheldon, Apopka, Fla. and E. E. Sheldon, Miami, Fla.; five sisters and one brother. Funeral services were held at the Presbyterian Church, October 26. Members of the Pickens County Medical Society with Dr. E. J. Bryson, Dr. J. C. Hunter, and J. E. Kessler served as Honorary pallbearers. Active pallbearers were Drs. N. C. Brackett, J. H. Hutchins, L. R. Poole, J. W. Potts, P. E. Swords, and Robert Jeanes.

Drs. W. C. Hearin and John F. Simmons of Greenville conducted the Maternity and Child Welfare Clinics at the Lonsdale Mill, Seneca, S. C., October 23. These clinics were held under the auspices of the State Board of Health.

WOMAN'S AUXILIARY

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NATIONAL NEWS LETTERS

Mrs. J. P. Simonds, Chairman of Press and Publicity of the Woman's Auxiliary to the American Medical Association, stated in a recent letter to me that the Association was very anxious for each County Auxiliary to receive the News Letters. These are published four times a year, October, January, March, and May. The price for the four issues is $1.00. The News Letters will be the best way in the world for us to keep up with what is going on in this large organization of ours, and I do hope that if each member of the South Carolina Auxiliary cannot subscribe to the Letters, each County Auxiliary can do so. Please send your subscriptions to Mrs. Lucius Cole, 1117 North Lathrop Ave., River Forest, Ill., as she is Chairman of Printing and Supplies.

Mrs. I. Jenkins Mikell, Chairman
Press & Publicity.

THE PICKENS COUNTY AUXILIARY

The Pickens County Medical Auxiliary sponsored an address, October 16, 1936, at the High School Auditorium, Dr. J. Warren White of the Shrine Hospital for Crippled Children in Greenville, S. C., being the speaker. He was introduced by the Auxiliary President, Mrs. J. L. Bolt.

Dr. White spoke to the Student Body of the Easley High School and to visitors on "Posture." His address was very interesting and instructive. Diagrams of correct and poor posture were also shown.

Mrs. W. B. Furman,
Publicity Chairman.

RIDGE MEDICAL AUXILIARY

The Ridge Medical Auxiliary met with Mrs. David Garvin at Ridge Springs in her attractive home on Main Street, October 19, 1936. The meeting was called to order by the president, Mrs. Garvin. After prayer the business program was carried out.

A very interesting paper was read by Mrs. T. G. Asbill on the Indian Medicine Man. A number of plants that the Indians used as medicine were mentioned. Mrs. W. P. Timmerman exhibited a specimen of Ilex Vamitara. A number of Indian relics were arranged on a table, such as a large piece of birch bark, a pottery vase, a peace pipe, a cook pot made by the Indians, a bead bag made by an Indian girl named Mildred Crow, a pair of tiny moccasins, a battle axe, a large spear, a small arrow head were displayed by Mrs. T. G. Asbill; Mrs. W. P. Timmerman showed a big collection of arrow heads, mortar and pestle, and a tomahawk; Mrs. E. C. Ridgell displayed several tomahawks, arrow heads, a pestle, a large Indian spoon that was given her grandmother, Mrs. Julius Banks, many years ago by a half Indian woman named Millie. Mrs. W. P. Timmerman told a beautiful Indian legend; she also showed a scrapbook containing a number of pressed medicinal plants.

The Auxiliary was well attended by members and several visitors; one new name was added to the roll. At roll call the members answered with the names of the Indian Tribes.

At the close of the meeting the doctors of the Ridge Medicaal Association as well as the

Auxiliary members were entertained at a delicious salad supper by Dr. and Mrs. Garvin. Every one left feeling that Dr. and Mrs. Garvin were charming host and hostess.

Cleo A. Ridgell,
Publicity Chairman.

The 29th Convention of the South Carolina State Nurses' Association was held in Florence, October 29-31. Dr. C. Fred Williams, Superintendent of the South Carolina State Hospital, and Dr. W. R. Mead, of the McLeod Infirmary of Florence, appeared on the program. Miss Laura Blackman, of the State Board of Health, was elected President.

Dr. Frank L. Geiger, Director of the Oconee County Health Department, has been transferred to Colleton County. Dr. W. B. Furman, Director of the Pickens County Health Department, will also have oversight of the Oconee County Health Department for the present. Dr. Furman attended the American Public Health Association which met in New Orleans, October 20-23.

Dr. T. L. W. Wellbrock, formerly of Charleston and Assistant in the Division of Surgical Pathology in the Mayo Clinic, is enjoying an extensive European clinical trip, visiting London, Hamburg, Berlin, Prague, Munich, Zurich, Freiburg, Vienna, Budapest, and Paris. Dr. Wellbrock is a frequent contributor to the Journal.

Dr. P. M. Workman of York visited his friend Dr. Harry Ross, Seneca, S. C. recently.

Dr. David Lyle, 57, York County senatorial nominee, died at 10:30 P.M., October 25, Rock Hill, S. C. His death was attributed to angina pectoris. Dr. Lyle has long been a political figure in the county. He has been a member of the General Assembly and has also served the City of Rock Hill as Mayor.

Dr. Lyle is survived by his widow; two sons, David and Nash, two daughters, Misses Jean and Henriette Lyle; two brothers and two sisters. Funeral services were held in the A. R. P. Church, Tuesday morning, October 27, and interment followed at Edgemoor, in Chester County. Dr. Lyle was a native of Chester.

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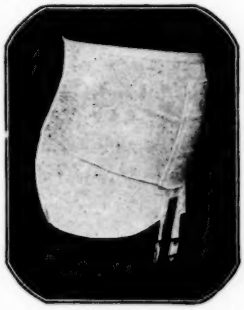

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THE SANATORIUM is a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

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THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

THE SANATORIUM maintains its own truck farm, dairy, and poultry yards.

Illustrated Booklet on Request